Remarks/Arguments

1. **Elections/Restrictions:** Examiner has withdrawn the restriction against claims 51 – 59 and Applicant presents these claims again for examination.

2. **Amendments to the Claims:** Claims 32 and 51 were amended to include the limitations of a conical element that is a single component and claims 32, 51, and 60 amended to recite an overlapping arrangement of the conical elements. It was the intention of the Applicant, by using the term "element" in the initially filed claims and through subsequent amendments, to convey the limitation of a building block that is a single, unitary component. Language is now added to claims 32, 51, and 60 to describe the individual building block, i.e., the conical element, of the shell structure as a single component. Language supporting this amendment is found in paragraph [0017] of the Specification as originally filed, which describes the formation of the "hub element" from a single flat sheet of material that is cut or folded to create an element having a vertex. The element thus formed is shown in FIG. 5. The limitation of the overlapping arrangement was previously presented in claims 33 and 52. Language was deleted from claims 32, 51, and 60 relating to the vertex of at least one conical element pointing outward from the inner volume as being irrelevant in view of the limitation of overlapping elements. The limitation "circular" cone base was deleted from claim 35. These amendments introduce no new subject matter and Applicant requests approval and entry of the currently amended claims.

3. **35 U.S.C. § 103(a) Rejections:** Examiner has rejected all claims as being unpatentable over Fuller (U.S. Patent 2,905,113), in view of Chamberlain and

Seaich (U.S. Patent 4,263,758). The Fuller reference discloses the "plydome", a structure made of flat plywood sheets. The sheets are attached at corners to adjacent sheets and connected so as to form a spherical structure. In so doing, struts are formed along the points of attachment across the corners. These sheets, however, have no vertex, and indeed, an open space is left in the structure at those locations, where two or more struts would intersect to form a vertex. This is because the nature of plywood prevents the sheets from being bent to form a vertex. Seaich discloses a geodesic-like structure that is made up of hexagonal and pentagonal structures, these structures being formed by an arrangement of six or five flat triangular pieces. Chamberlain teaches a hemispherical structure comprising partial spherical elements.

4. None of the cited prior art references, alone or in combination, teaches the use of a conical element that is a single component having a vertex and a wall formed by straight lines that extend from the vertex to the base of the component. None of these references suggests that one could arrange conical elements in an overlapping arrangement, in order to provide a great degree of adjustability in the strut lengths, in order to easily and inexpensively construct a shell structure. Fuller discloses elements that have no vertex, Seaich discloses a conical structure made up of a plurality of flat triangles, Chamberlain discloses a structure that has no struts and is made up of continuously curved spherical elements.

5. Examiner further asserts that the structure of the present application is obvious in view of Fuller, Seaich and Chamberlain, because it would have been an obvious design choice to choose a certain shape for the element to form the frame

and shape of the structure, as long as the element provided sufficient support and coverage for the structure. Applicant strongly disagrees. The intent of the present application is to provide a structure that is inexpensive and easily assemblable, by even unskilled builders. The inventor developed the concept of the overlapping arrangement of a plurality of conical elements as claimed, because overlapping cones would allow a great deal of freedom in attaching the cones together, thus eliminating the need for precise measurements, and because it is extremely simple to manufacture cones from flat sheet material, such as from sheet metal, cardboard or other paper products, and myriad other materials that can be easily bent to form the cone. For example, a flat form with a cut-out section to form the angular deficit of the cone may be simply and inexpensively stamped from a flat sheet and the edges of the cut-out section simply welded, stitched, stapled, glued, riveted, taped, attached with fabric hook-and-loop fasteners, or otherwise fastened together to form the conical element. The assembly of the structure of the present application requires no framing, no laying out of elements along great circle grid lines, no careful measuring and placement of pentagonal and hexagonal conical structures. One need only start with one conical element, and begin attaching additional elements to it in an overlapping fashion, to create a structure that will generally approximate a sphere in its overall shape. The final structure will be a "live" structure, in that the elements that provide the cover also provide the structural support, because of the automatic formation of struts that run from vertex to vertex of adjacent elements. None of this is possible with the Chamberlain, Fuller, or Seaich structures.

6. The selection of the conical element as claimed in the present application was not an engineering design choice, in terms of look, aesthetics, ornamentation, but

rather, a structural engineering choice. The elements in Chamberlain require careful machining to create a partial spherical section. The conical elements disclosed in any of the prior art that has been cited that disclosed a geodesic dome having a closed structure were constructed of a plurality of flat triangular or diamond shaped pieces that had to be held together in some manner to form the conical element with vertex. The Fuller structure relied upon in this last Office Action does not disclose a closed structure formed by structural elements (plywood sheets) and the elements have no vertexes.

7. Applicant submits that the independent claims 32, 51, and 60 all contain allowable subject matter, and that, thus, the dependent claims also contain allowable subject matter. Applicant has traversed all obviousness rejections raised by Examiner and requests that Examiner withdraw the rejections and allow all currently presented claims.

8. **Conclusion:** Claims 32, 51, and 60 were amended and claims 33 and 52 cancelled; no new claims were added. Arguments were presented to overcome all of the 35 U.S.C. § 103(a) rejections raised.

9. This amendment is being filed within the shortened statutory period of the Office Action, thus no time extension fees are due.

10. Applicant believes the claims as currently presented are in condition for allowance. Should, however, issues be raised in this response that can easily be

resolved in a direct communication, Applicant kindly requests that Examiner call or email the Undersigned.

Respectfully submitted,

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